FISCHER
MESS- UND REGELTECHNIK

Type DE 50

Application

Measuring transmitter with limit switching functions for overpressure, vacuum and differential pressure especially for gaseous medium.

This line of products is suitable for

- Airconditioning
- Ventilation
- Environment technics

Typical Applications

- Continious control of ventilating
- Monitoring of tapline filters, exhausters, etc.
- Chimney draft measurement
- Flow- and control pressure measurement
- Surface technique

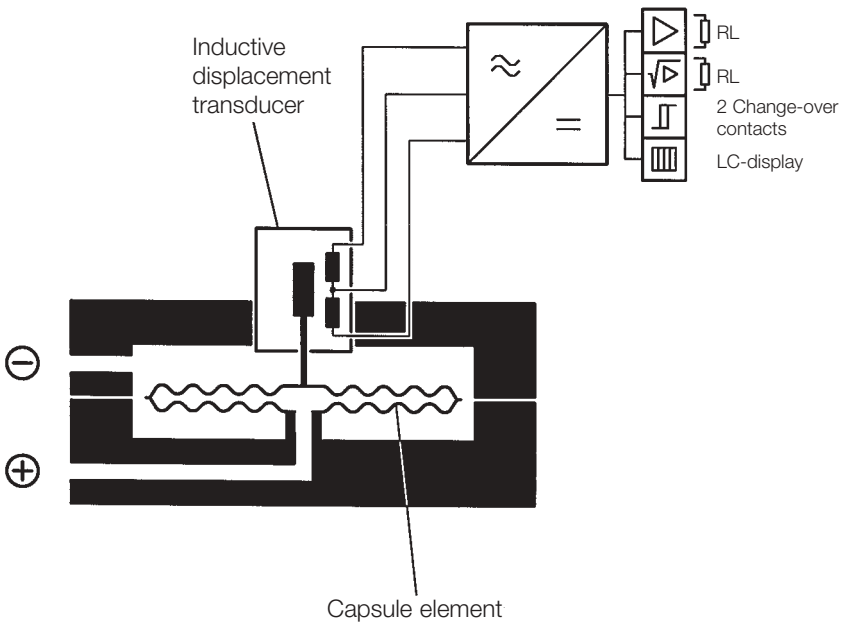
Main Features

- High overpressure safety
- Rugged design
- Maintenance-free measuring system due to the wear resisting inductive measuring cell

Construction an Operation

The function of this transmitter is based on a capsule element measuring system suitable for over-pressure-, vacuum- and differential pressure measurements.
The pressure or the differential pressure, which has to be measured, displaces the capsule element and moves hereby the core of the inductive displacement transducer.
The electronic amplifier generates an electrical output signal. Different types of electronics can be supplied.
Apart from the different operating voltages the output signal can be supplied as a current signal or a voltage signal.
Flow rates of gaseous medium are often measured by measuring the differential pressure. In order to obtain a flow proportional measuring value the differential pressure signal has to be square-root extracted. For those applications transformation electronics are used which supply square-root extracted output signals.
In addition to the analogue output signal potential free relay outputs can be supplied. They can be adjusted to any value within the measuring range.
By means of a built-in LC-display (option) a local linear indication of pressure-/differential pressure measuring values is possible.

Functional Diagram



Technical Data

Measuring ranges	0–1 mbar to 0–600 mbar (acc. to ordering code)
Nominal pressure of measuring system	Max. 3 bar (acc. to ordering code)
Max. static pressure	Overpressure safe up to permitted nominal pressure
Measuring accuracy	Measuring range 1.6/2.5 mbar ± 2.5 % FS Measuring range ≧ 4 mbar ± 1% FS
Temperature drift	0.5 % / 10 K
Permissible ambient temperature	–10 °C to +60 °C
Permissible medium temperature	–20 °C to +70 °C
Protection class	IP 54 acc. to DIN 40050

Electrical Data

Electric connections	3-wire	3-wire	2-wire
Operating voltages	230 V AC 115 V AC 24 V AC 24 V DC	230 V AC 115 V AC 24 V AC 24 V DC	24 V DC
Power draw	3 VA approx.	3 VA approx.	3 W approx.
Output signal	0–20 mA	0–10 V DC	4–20 mA
Apparent ohmic resistant	Max. 800 Ohms	> 2 k Ohms	Max. 500 Ohms
Current limit	30 mA approx.	30 mA approx.	30 mA approx.
Voltage limit	–	12 V DC approx.	–

Square-rooted output with floating figures suppression	+/– 0.5 % 2 % adjusted
Slope adjustment	10 % approx. of full scale range
Zero point adjustment	10 % approx. of full scale range

Measuring Value Indication / Switchpoints

Indication	31/2-digit LC-display
Switchpoint adjustment	The digital indicator can be switched over between the differential pressure actual value and the switch point adjustments, via a selection switch. Selection of the desired output I or II via a selection switch. The display now shows the relating, adjusted set point. The set points are adjustable over the complete measuring range.
Switchpoint hysteresis	2 % approx.
Contact output	1 or 2 potential-free change-over contacts
Load data of contacts	U max. = 250 V AC, I max. = 2 A, P max. = 250 VA

Connection

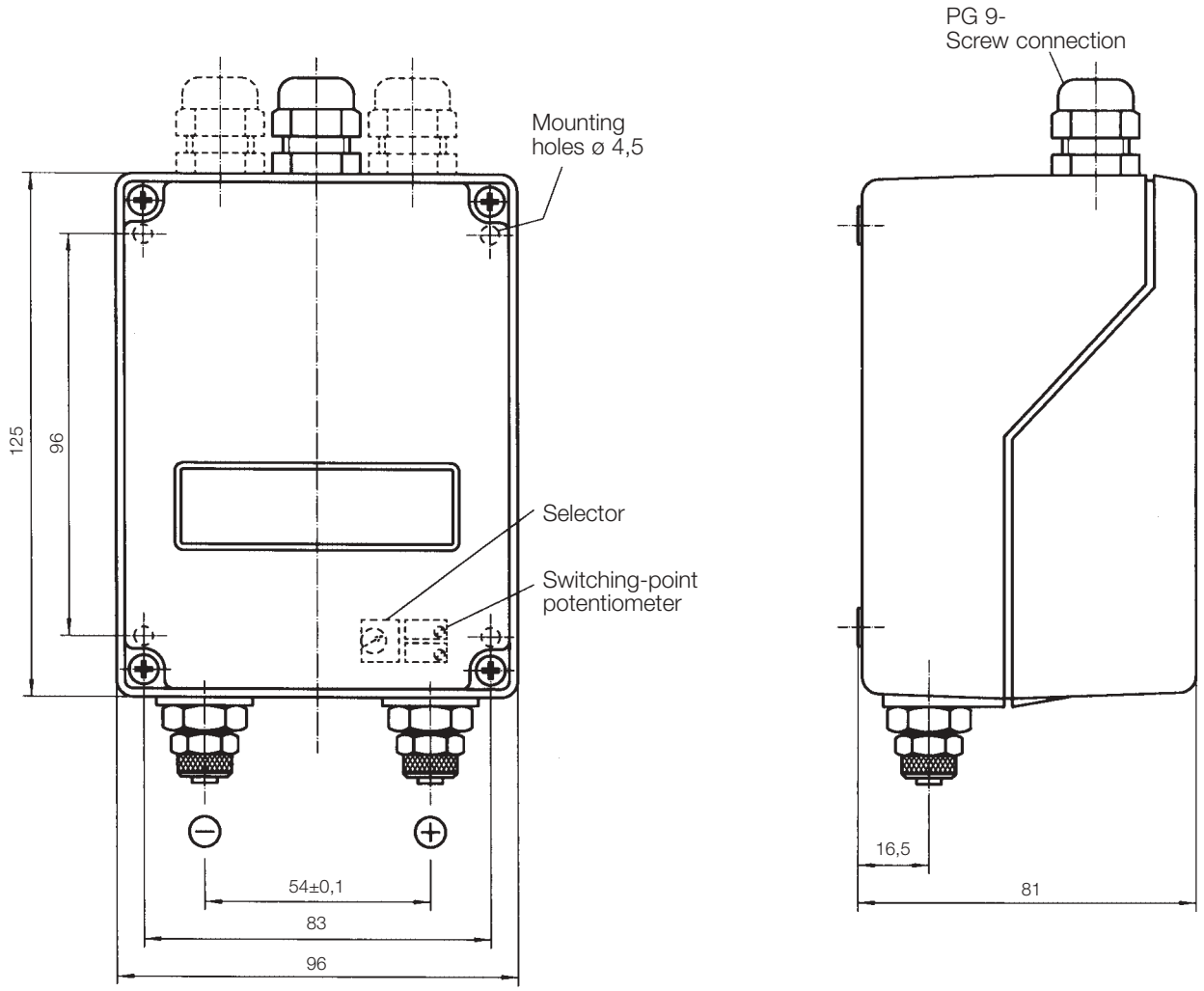
Electrical connections	Internal connector bloc, PG 9-screw connections
Pressure connections	Female screw thread G 1/4 cutting ring screw connection for 6/8 mm pipe Screw connection aluminium for 6-8 mm flexible tube

Material

Case	Die-cast part, painted
Covering cap	ABS-self-extinguishing
Measuring element	Capsule element of Cu Be 2

Installation	In case of wallmounting: vertical In case of a different fitting position zero point adjustment is recommended

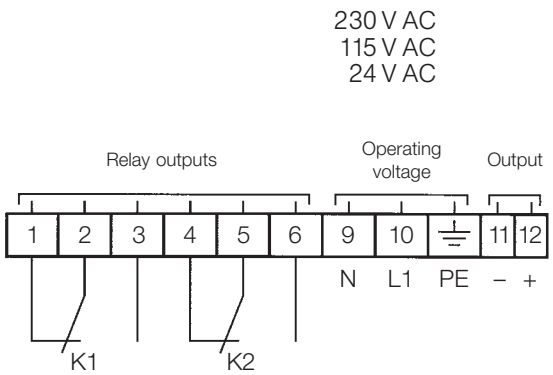
Dimensioned Drawings



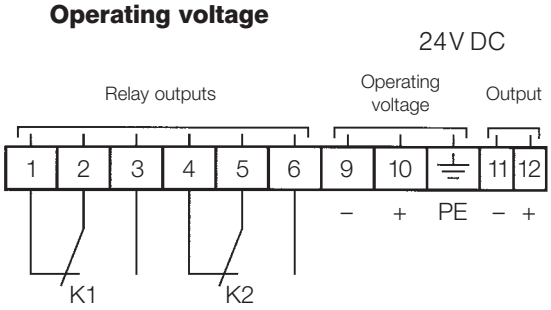
Differential Pressure Transmitter Type DE 50

Connection Schemes

Operating voltage

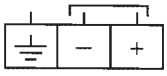


Operating voltage



Operating voltage

24 V 2-wire



Ordering Code

Differential Pressure Transmitter Type DE 50

Measuring Range	Max. Static Pressure		
0– 1.6 mbar	8 mbar (cl.: 2.5)	9	7
0– 2.5 mbar	8 mbar (cl.: 2.5)	9	8
0– 4 mbar	20 mbar	5	2
0– 6 mbar	30 mbar	5	3
0– 10 mbar	50 mbar	5	4
0– 16 mbar	80 mbar	5	5
0– 25 mbar	125 mbar	5	6
0– 40 mbar	200 mbar	5	7
0– 60 mbar	300 mbar	5	8
0–100 mbar	500 mbar	5	9
0–160 mbar	800 mbar	6	0
0–250 mbar	1200 mbar	8	2
0–400 mbar	2000 mbar	8	3
0–600 mbar	3000 mbar	8	4
– 1 to 0.6 mbar	5 mbar	3	2
– 1 to 5 mbar	30 mbar	3	5
– 4 to 6 mbar	50 mbar	5	0
– 10 to 6 mbar	80 mbar	6	3
– 20 to 40 mbar	300 mbar	6	8
– 40 to 60 mbar	500 mbar	7	1
–100 to 60 mbar	800 mbar	7	3
–250 to 150 mbar	2000 mbar	7	7

Pressure Connections

Female screw thread BSP 1/4"	0	1
Cutting ring connection brass for 6 mm tube	2	8
Cutting ring connection brass for 8 mm tube	2	9
Cutting ring connection brass for 10 mm tube	3	0
Screw connection aluminium for 6 mm flexible tube	4	0
Screw connection aluminium for 8 mm flexible tube	4	1

Electrical Output Signale

0–20 mA	linear	A
4–20 mA	linear 2-wire, only 24 V DC, without contacts and square-root extracting	B
0–10 V DC	linear	C
0–20 mA	square-rooted	E
4–20 mA	square-rooted	F
0–10 V DC	square-rooted	G
4–20 mA	linear	P

Supply Voltage

230 V AC	1
115 V AC	2
24 V AC	4
24 V DC	9

Indication / Switch Sections

Without indication	0	0
31/2-digit LC-display	1	0
31/2-digit LC-display with 1 potential-free contact	2	F
31/2-digit LC-display with 2 potential-free contacts	2	G

Fischer · Meß- und Regeltechnik GmbH · Bielefelder Str. 37a · D-32107 Bad Salzuflen · Tel. (0 52 22) 9 74-0 · Fax (0 52 22) 71 70
eMail: info@klaus-fischer.de · Internet: www.fischer.ag
Contact in Sweden: UGAB, Box 64, SE-243 22 Höör Tel. +46 413 24540 Fax +46 413 23183 eMail: post@ugab.se www.ugab.se